IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

CENTER FOR BIOLOGICAL DIVERSITY; SAVE OUR SPRINGS ALLIANCE, INC.,	§	
Plaintiffs,	§	CASE NO. 1:16-cv-00876-LY
v.	§	**PLAINTIFFS' BRIEF ON THE MERITS**
TEXAS DEPARTMENT OF TRANSPORTATION; JAMES BASS, EXECUTIVE DIRECTOR OF TEXAS DEPARTMENT OF TRANSPORTATION; UNITED STATES FISH AND WILDLIFE SERVICE,	§	
Defendants.	§	

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INTRODUCTION

Found only in central Texas, the Barton Springs salamander, Austin blind salamander, and golden-cheeked warbler are highly endangered. The salamanders suffer from degradation of the quality and quantity of water flowing into the underground caves and springs they call home in the Barton Springs segment of the Edwards Aquifer. The warbler suffers from widespread destruction and fragmentation of its woodland habitat.

Despite information showing that highway projects cause and perpetuate degraded water quality in the salamanders' habitat and contribute to the destruction of the warbler's habitat, the Texas Department of Transportation ("TxDOT") continues to plan and implement projects in these sensitive habitats without proper consideration and mitigation of impacts to this endangered wildlife. At issue here, the MoPac Intersections Project ("Intersections Project") would destroy trees and other vegetation and replace them with impervious cover (paved surfaces) for two miles of additional highway lanes over the sensitive Edwards Aquifer Recharge Zone, causing a change in water quality and flow patterns that can make the Aquifer's aquatic habitat unsuitable for the endangered salamanders.

The threat of litigation prompted TxDOT to initiate "consultation" with the U.S. Fish and Wildlife Service ("Service") under the Endangered Species Act ("ESA"). By working with the expert wildlife agency, the consultation process aims to protect endangered wildlife through commitments to implement mitigation measures. The Service expressed numerous concerns about adverse impacts from the Intersections Project to the Barton Springs salamander, Austin blind salamander, and golden-cheeked warbler. But TxDOT refused to implement any further changes to the project to protect the endangered wildlife. Eventually, the Service gave up its effort to push for mitigations, reversed course, and determined that the Intersections Project is

not likely to adversely affect the salamanders and warbler. The Service flatly failed to justify its basis or reasons for doing so.

The Service's change in position resulted from staff eventually choosing to ignore the "relevant factors." *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). The Service has failed to properly consider the well-recognized harmful effects of an increase in impervious cover on water quality; relied too heavily on unproven sediment and pollution controls; and ignored the combined effects of the Intersections Project with underground utility relocation and additional highway projects and other urban developments in the area. Thus, the Service's decision and TxDOT's reliance on that faulty decision were unreasonable and must be set aside.

BACKGROUND

A. MoPac Intersections Project

The Intersections Project's declared purpose is to provide operational improvements to two heavily used intersections in Travis County, Texas. FWS AR003511; TxDOT AR008352. The project would separate the cross streets of Slaughter Lane and La Crosse Avenue so that MoPac would pass under them. FWS AR003512; TxDOT AR008353. It would extend approximately two miles in length, from 2,500 feet north of Slaughter Lane to 3,700 feet south of La Crosse, adding six new travel lanes, two lanes with one "auxiliary" lane in each direction. FWS AR003512-13; TxDOT AR008353-54.

The Intersections Project is in the ecologically sensitive Edwards Aquifer Recharge Zone, which recharges directly into Barton Springs. FWS AR003524-25, AR003531-32; TxDOT AR008365-66, AR008372-73. For a substantial part of the distance, construction of the new lanes will require digging down 23 feet below grade and directly into the exposed, cave-forming

Edwards Aquifer limestone. FWS AR003516; TxDOT AR008357. The project area lies within the subsurface drainage basin for Blowing Sink Cave, which connects directly to the Edwards Aquifer. FWS AR003525; TxDOT AR008366.

B. Impacted Endangered Wildlife

1. Barton Springs Salamander and Austin Blind Salamander

The U.S. Fish and Wildlife Service ("Service") listed the Barton Springs salamander and Austin blind salamander as endangered species under the Endangered Species Act ("ESA") in 1997 and 2013, respectively. FWS AR004434-49, AR004567-616; TxDOT AR00957-72, AR005332-81.

Both salamanders are neotenic (do not transform into terrestrial form) and spend their entire lives in aquatic habitats such as springs, wet caves, and groundwater. Both salamanders rely on clean, well oxygenated water free of sediment. The Barton Springs salamander "depends on a continual supply of quality springflows from the Barton Springs segment of the Edwards Aquifer for its survival." FWS AR001771.

"The primary threat to the Barton Springs salamander is degradation of the quality and quantity of water that feeds Barton Springs resulting from urban expansion over the Barton Springs watershed (including roadway, residential, commercial, and industrial development)." FWS AR004441. In its five-year status review of the salamander in 2006, the Service found that it continues to face these threats and the possibility of extinction within its range. FWS AR001774-75. Similarly, the 2013 final listing rule for the Austin blind salamander identifies "[h]abitat modification, in the form of degraded water quality and quantity and disturbance of spring sites" as the primary threat to the Austin blind salamander. FWS AR004587.

Changes in water quality and flow patterns can make aquatic habitat unsuitable for the salamanders. FWS AR004441; FWS AR004587. Contaminants can impact both the salamanders and their invertebrate prey base. FWS AR004442-43, AR004446-47, AR004588. Both salamander species are threatened by urbanization and increased impervious cover (paved surfaces), which alters the normal hydrologic regime when it replaces natural vegetation and topsoil, degrading water quality and quantity in the salamanders' habitat. FWS AR004441, AR004588-89.

Barton Springs and Austin blind salamanders live in the springs and caves near the proposed Intersections Project. FWS AR002855-56, AR002864; TxDOT AR007243-44, AR007252. Dye studies conducted by the City of Austin identified channels of rapid subsurface flows from the Intersections Project area to Blowing Sink Cave and on to Barton Springs, providing an avenue for contaminants to reach these key salamander habitats. FWS AR002798, AR003525; TxDOT AR007250, AR008273. The Austin blind salamander lives only in Barton Springs. FWS AR004571. In addition to Barton Springs, the Barton Springs salamander also occurs in other nearby springs and caves of the Edwards Aquifer. TxDOT AR005542, AR005553-54. Federal Defendants admit that Barton Springs salamanders live in the aquifer within Blowing Sink Cave, which flows directly to Barton Springs. See Fed. Defs.' Answer, ECF No. 35 at ¶ 37. This cave is approximately one mile east of the Intersections Project (specifically, at MoPac's intersection with Slaughter Lane). FWS AR002854, AR002856; TxDOT AR007242, AR007244.

2. Golden-Cheeked Warbler

The golden-cheeked warbler (*Setophaga chrysoparia*) is a small insectivorous songbird that breeds only in central Texas where mature ash-juniper-oak woodlands or forests occur. FWS

AR004389; TxDOT AR009768. Due to accelerating loss of breeding habitat, the Service emergency listed the warbler as an endangered species under the ESA in 1990. FWS AR 004389-96; TxDOT AR009768-80.

The principal threats to the warbler are habitat destruction, modification, and fragmentation from urbanization and some ranching practices. FWS AR004389; TxDOT AR009768. Because of the warbler's narrow habitat requirements, habitat destruction eliminates populations. FWS AR004395; TxDOT AR009777. Warblers may be impacted by removal of nesting trees; removal and fragmentation of foraging habitat; and disturbance from construction activities and noise. FWS AR004762; TxDOT AR006909. In a five-year review of the warbler completed in 2014, the Service explained that ongoing, widespread destruction of habitat continues to threaten the warbler, and as such, concluded that the warbler continues to be in danger of extinction throughout its range. FWS AR004698; TxDOT AR009839.

The final listing rule for the warbler identifies highway construction as one of the causes of the destruction of warbler habitat. FWS AR004393; TxDOT AR009775. Given the threat of impacts to the warbler's habitat from highway construction, the rule specifically calls out federally-funded highway projects in the warbler's habitat as being subject to Section 7 consultation with the Service. FWS AR004395; TxDOT AT009778.

Golden-cheeked warbler habitat lies within the project boundaries and surrounding zones, with approximately 7.4 acres of golden-cheeked warbler habitat occurring within the Intersections Project's footprint. FWS AR002858, AR002860; TxDOT AR007246, AR007248.

C. ESA Consultation

As early as September 2014, the Central Texas Regional Mobility Authority asked the Service for data and survey reports regarding listed or candidate species to study a proposed

highway in the MoPac South corridor, indicating that the project would receive federal funding and thus require ESA consultation between the Federal Highway Administration and the Service. FWS AR004708-09; TxDOT AR06062-63.

TxDOT completed a Biological Evaluation Form ("BE") for the Intersections Project in February 2015, in which TxDOT hastily determined that the Intersections Project would have "no effect" on ESA-protected species and their habitats, and therefore, consultation with FWS would not be required. FWS AR002879-97; TxDOT AR007265-85. Shortly after, TxDOT requested early coordination with the Texas Parks and Wildlife Department ("TPWD") on the project. FWS AR002803; TxDOT AR008276. In response, TPWD detailed its concerns with the project's impacts to water quality.[1] TPWD disagreed with TxDOT's "no effect" determination for the endangered salamanders, and it recommended consultation with FWS. FWS AR002798-99; TxDOT AR008273-74. In its response to TWPD, TxDOT did not commit to implementing TPWD's recommendations or assess their feasibility. Rather, TxDOT posited that the state wildlife agency's recommendations were impractical or unnecessary, and thus the agencies came to an impasse on the project. FWS AR004767; TxDOT AR008278.

TPWD contacted the Service with its concerns about the Intersections Project in March 2015. FWS AR004758. The same month, the Service told TxDOT it disagreed with the "no effect" determinations for the two salamanders and golden-cheeked warbler, adding, the Service "highly recommend[s] that TxDOT consult with the Service under Section 7 of the ESA for this

[1] Among other things, TPWD did not agree with TxDOT's conclusion that the Intersections project would only have "possible, but negligible impacts on groundwater quality" based on TxDOT's assessment of historical groundwater quality data and plans for temporary and permanent BMPs. FWS AR002801; TxDOT AR008275.

project . . . ."[2] FWS AR004762-63; TxDOT AR006909. The Service also found a "high likelihood for the project to adversely affect the Barton Springs salamander" given the number of known karst recharge features in the project area and additional features likely to be discovered during construction. *Id*.

Ignoring these recommendations from expert wildlife agencies, TxDOT produced its Biological Studies Technical Memorandum in June 2015, which included the February BE as an Appendix—without any apparent modifications—but continued to make "no effect" determinations. FWS AR002832-916; TxDOT AR007221-304. In December 2015, TxDOT finalized an Environmental Assessment ("EA") for the Intersections Project, along with a Finding of No Significant Impact ("FONSI"), under the National Environmental Policy Act ("NEPA"), 42 U.S.C. §§ 4321-4351. FWS AR003507-78; TxDOT AR008348-421.

Ongoing concerns about the Intersections Project's impacts on ESA-protected species led Plaintiffs to send TxDOT a 60-day notice of intent to sue on May 18, 2016, which detailed the failure of the BE to support "no effect" determinations for the Austin blind salamander, Barton Springs salamander, and golden-cheeked warbler. TXDOT AR008578-87. Responding to the threat of litigation, the following month TxDOT modified its prior "no effect" determinations for the Intersections Project—saying it "may affect" but is "not likely to adversely affect" the endangered salamanders and warbler—and initiated consultation and sought FWS's concurrence with TxDOT's determinations. FWS AR003488-94; TxDOT AR008651-57, AR008967-68.

[2] At this stage the Service had not received any environmental documentation for the Intersections Project from TxDOT, but the agency said it could make this assessment based on the project's proximity to known species and the Edwards Aquifer Recharge Zone. FWS AR004762; TxDOT AR006909.

Plaintiffs subsequently filed this lawsuit against TxDOT to ensure completion of consultation as the ESA requires. Compl., ECF No. 1. Despite ongoing consultation, TxDOT informed Plaintiffs that it anticipated beginning utility relocation work as soon as May 1, 2017, with further construction to begin on September 1, 2017. Status Report, ECF No. 14. Plaintiffs had concerns about the potential for environmental impacts from impending utility relocation work, based on a report that a bore hole had collapsed during previous utility work at the site. FWS AR003290-93; TxDOT AR009713-16. Because TxDOT would not commit to delaying construction activities until completion of consultation, Plaintiffs sent TxDOT a supplemental 60-day notice of intent to sue on March 31, 2017, for violations of ESA sections 7(d) and 9.[3] FWS AR003284-93; TxDOT AR009707-16. Shortly thereafter TxDOT agreed to jointly move for a stay of the case and stipulate to postpose any construction activities during the stay. Joint Mot. to Stay, ECF No. 15.

The informal consultation process between TxDOT and the Service included communications and discussions between the agencies that lasted approximately one year, ending with the Service's transmittal of a letter concurring with TxDOT's "not likely to adversely affect" determination for all three ESA-protected species. FWS AR005188-98; TxDOT AR009752-62.

[3] Section 7(d) provides that once ESA consultation is initiated on an action, the agency "shall not make any irreversible or irretrievable commitment of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures . . . ." 16 U.S.C. § 1536(d). Section 9 prohibits any "person" from "taking" threatened and endangered species. 16 U.S.C. § 1538(a)(1); 50 C.F.R. § 17.31.

LEGAL FRAMEWORK

A. Endangered Species Act

The Endangered Species Act, 16 U.S.C. §§ 1531-1544 ("ESA"), is "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation." *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 180 (1978). In enacting the law, Congress recognized that losses from extinctions are irreversible and incalculable but also preventable. *Id.* at 184. The ESA reflects Congressional intent to afford endangered species the "highest of priorities" and to "halt and reverse the trend toward species extinction, whatever the cost." *Id.* at 174, 184, 194.

When a species has been listed or critical habitat designated under the ESA, all federal agencies—including TxDOT as a delegate of the Federal Highway Administration ("FHWA")[4]—must consult with the FWS to ensure their programs and activities comply with the ESA. 16 U.S.C. § 1536(a)(2). To this end, "each federal agency shall, in consultation with and with the assistance of [the Service], insure that any action authorized, funded, or carried out by such agency (hereinafter . . . 'agency action') is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by [FWS] . . . to be critical." *Id.*; 50 C.F.R. § 402.14. An agency must review its actions "at the earliest possible time to determine whether any action may affect listed species or critical habitat." 50 C.F.R. § 402.14(a). In fulfilling these requirements, agencies must use the best scientific and commercial data available,

[4] TxDOT carries out environmental review, consultation, and other actions required by federal environmental laws for federally funded or approved projects under 23 U.S.C. § 327 and a Memorandum of Understanding dated December 16, 2014, and executed by FHWA and TxDOT. TxDOT AR06884-907.

16 U.S.C. § 1536(a)(2), "to ensure that the ESA not be implemented haphazardly, on the basis of speculation or surmise." *Bennett v. Spear*, 520 U.S. 154, 176 (1997). Effects determinations must be based on the direct, indirect, and cumulative effects of the action when added to the environmental baseline and other interrelated and interdependent actions. 50 C.F.R. § 402.02 (defining "effects of the action").

To initiate consultation, an action agency (here, TxDOT) must assess the impacts of an action on listed species and their habitat and provide all relevant information about such impacts to the expert wildlife agency (here, the Service). 50 C.F.R. § 402.14(c). ESA regulations permit "informal consultation" if an agency determines its action "may affect" but is "not likely to adversely affect" a listed species or its critical habitat—but only if the Service agrees in writing with an action agency's determination.[5] 50 C.F.R. §§ 402.13, 402.14(b). In other words, an agency must engage in formal consultation if (1) it knows or learns its action is "likely to adversely affect" a listed species or critical habitat, or (2) the Service does not concur with the agency's "not likely to adversely affect" determination. *Id.* § 402.14(a)-(b). The Service should not concur "[i]f the nature of the effects cannot be determined," as "benefit of the doubt is given to the species." U.S. FISH & WILDLIFE SERV. & NAT'L MARINE FISHERIES SERV., ENDANGERED SPECIES CONSULTATION HANDBOOK 3-12 (1998), https://www.fws.gov/endangered/esa-library/pdf/esa_section7_handbook.pdf ("Consultation Handbook"). An agency is relieved of the

[5] A determination of "[m]ay affect, but is not likely to adversely affect species . . . is appropriate when effects to the ESA-listed species are expected to be beneficial, discountable, or insignificant. . . . Insignificant effects relate to the size of the impact (and should never reach the scale where take occurs), while discountable effects are those that are extremely unlikely to occur." U.S. FISH & WILDLIFE SERV. & NAT'L MARINE FISHERIES SERV., ENDANGERED SPECIES CONSULTATION HANDBOOK B-55 (1998), https://www.fws.gov/endangered/esa-library/pdf/esa_section7_handbook.pdf.

obligation to consult on its actions only where the action will have "no effect" on listed species or designated critical habitat.

B. Administrative Procedure Act

The Administrative Procedure Act ("APA"), 5 U.S.C. §§ 551 *et seq.*, provides for judicial review of federal agencies' and officials' compliance with the ESA and with the APA's own procedural requirements. Under the APA, courts "shall hold unlawful and set aside" agency action, findings, or conclusions found to be "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A).

C. Standard of Review

Courts review ESA consultations under the APA and set aside such decisions if they are arbitrary, capricious, or otherwise not in accordance with the law. *Medina Cty. Envtl. Action Ass'n v. Surface Transp. Bd.*, 602 F.3d 687, 699 (5th Cir. 2010); *see Wild Fish Conservancy v. Salazar*, 628 F.3d 513, 521 (9th Cir. 2010). The Fifth Circuit holds that "[u]nder this standard, we must assure ourselves that the agency considered the relevant factors in making the decision, its action bears a rational relationship to the statute's purposes, and there is substantial evidence in the record to support it; but, we cannot substitute our judgment for that of the agency." *Medina Cty.*, 602 F.3d at 699 (quoting *Pub. Citizen, Inc. v. U.S. Envtl. Prot. Agency*, 343 F.3d 449, 455 (5th Cir. 2003)); *see also Motor Vehicle Mfrs. Ass'n of U.S. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43-44 (1983). A court need not defer to agency conclusions that are not supported by the administrative record or that run counter to the evidence before it. *W. Watersheds Project v. Kraaynbrink*, 632 F.3d 472, 493 (9th Cir. 2011) (citing *Earth Island Inst. v. Hogarth*, 494 F.3d 757, 763-64 (9th Cir. 2007)). And "[t]he reviewing court should not attempt itself to make up for an agency's deficiencies" and "cannot supply a reasoned basis for

the agency's action that the agency itself has not given." *Humane Soc'y of U.S. v. Locke*, 626 F.3d 1040, 1048 (9th Cir. 2010).

ARGUMENT

A. Defendants Violated the ESA by Failing to Analyze and Mitigate Numerous Impacts to Endangered Wildlife from the MoPac Intersections Project

The Service's concurrence with TxDOT's "not likely to adversely affect" determination failed to properly consider all relevant factors or articulate a rational connection between the facts found and the conclusions made. *See Motor Vehicle Mfrs. Ass'n*, 463 U.S. at 43 (citing *Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 168 (1962)). Because TxDOT relies on the Service's flawed concurrence decision, it has failed to ensure that the Project will not jeopardize the continued existence of the Austin blind salamander, Barton Springs salamander, and golden-cheeked warbler in violation of the ESA. 16 U.S.C. § 1536(a)(2); 50 C.F.R. Part 402.01.

1. TxDOT Refuses to Adopt Conservation Measures the Service Recommended, But the Service Concurs With TxDOT Anyway

In response to TxDOT's initiation of consultation in June 2016, the Service expressed concerns about potential impacts of the project on the endangered species and informed TxDOT that it could not concur with the "not likely to adversely affect" determination. *See, e.g.*, FWS AR003429-31, AR004898; TxDOT AR008987, AR009009-12. In July, the Service asked to discuss their concerns with TxDOT "to determine if we are able to reach concurrence with the *implementation of additional conservation measures*." FWS AR004898; TxDOT AR008987 (emphasis added). The Service also conveyed concerns related to potential effects for the endangered salamanders, such as a concern that proposed water quality standards may not be met

and concerns about potential impacts from the likelihood of encountering unknown recharge features during construction. FWS AR004898; TxDOT AR008987.

The Service then wrote TxDOT in September, again stating it could not concur with TxDOT's determination, and explaining that TxDOT's request for informal consultation did not include the information the Service needed to move forward with consultation. FWS AR003429-31; TxDOT AR009009-12. The Service provided a non-exhaustive list of its concerns about the Intersections Project's potential impacts to the endangered species and detailing the inadequacies of the information and analysis provided in the request for informal consultation. FWS AR003429-31; TxDOT AR009009-12. The Service further emphasized that TxDOT's evaluation should be based on the best scientific information,[6] with citations to that information, including any relevant information that may run counter to its position so that the Service could "make a well-reasoned and comprehensive decision in the course of consultation." FWS AR003429; TxDOT AR009010.

TxDOT failed to address the Service's many enumerated concerns about the Intersection Project's impacts to endangered wildlife, but nonetheless, the Service eventually concurred with TxDOT's "not likely to adversely affect" determination for all three endangered species. An agency is entitled to change its mind during the consultation process, but it must provide a reasoned explanation for doing so. *Ctr. for Biological Diversity v. U.S. Forest Serv.*, 408 F. App'x 64, 66 (9th Cir. 2011) (*citing Nat'l Ass'n of Home Builders v. Defs. of Wildlife*, 551 U.S. 644, 659 (2007). Here, nothing in the record reasonably explains how the Service went from its

[6] The Service specifically asked TxDOT to include a significant amount of research available on how water quality degradation may affect the salamanders. FWS AR003429-30; TxDOT AR009010-11.

initial concerns to its final concurrence decision, given that nearly all of its concerns appear to have gone unaddressed by TxDOT.[7] *Contra Ctr. for Biological Diversity*, 408 F. App'x at 66 (finding that the Service satisfied ESA requirements in its concurrence because "[t]he path to FWS' final decision can be discerned from the beginning of the consultation process to its letter of concurrence.").[8] In fact, it appears that the primary change that occurred during the consultation process was in the Service employees working on the consultation.[9]

A clear illustration of how little changed between the initiation of consultation and the Concurrence Letter can be seen in a side-by-side comparison of the conservation measures explicitly listed in the Concurrence Letter (FWS AR005191; TxDOT AR009755) with the nearly identical list of conservation measures included in TxDOT's initiation of consultation letter

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[7] The Service's Consultation Handbook advises that, in a situation like this where the Service cannot initially concur, a continued informal consultation process may result in an elimination of potential impacts, allowing the Service to "concur in writing that the action, as revised and newly described, is not likely to adversely affect listed species." Consultation Handbook 3-12. When that happens "the concurrence letter must clearly state any modifications agreed to during informal consultation" because "concurrence depends upon implementation of the modifications." *Id.*

[8] In *Center for Biological Diversity* the court found, in part, that the Service's concurrence was lawful because the action agency had incorporated many of the Service's recommendations into their project. 408 F. App'x at 66 ("FWS' letter reflects a holistic assessment of all the recommendations it had made and the extent to which they had been incorporated into the Forest Service's Biological Assessment.")

[9] The record shows that Darren LeBlanc, the Service's Texas Transportation Liaison in Austin, stopped working on TxDOT projects sometime in November 2016. FWS AR005028. LeBlanc was the author of multiple communications critical of the Intersections Project, as discussed above, both prior to and during the course of consultation. *See, e.g.*, FWS AR003429-31, AR004762-63; TxDOT AR006909, AR009009-12. Donna Anderson from the Service's Clear Lake office was then assigned on detail for TxDOT projects for at least three weeks. FWS AR005028-31. Subsequently the Service's Coastal Field Office in Houston became the lead on the Intersections Project consultation, despite most of the office's staff not having any knowledge of the karst habitat involved in the Project, as the Houston office does not deal with those particular habitat types as part of their responsibility. FWS AR003294.

(FWS AR003493; TxDOT AR008656) and in an additional intervening letter from TxDOT (FWS AR003444-45; TxDOT AR009022-23). Exhibit A.

As discussed further below, the Service failed to rationally consider and explain a number of relevant factors, including but not limited to available scientific evidence regarding the questionable effectiveness of sediment controls and harm caused by impervious cover to the endangered salamanders, the broad range of damaging pollutants, the potential harms of void encounters, and additional risks posed by other highway projects in the Barton Springs Recharge Zone and underground utility relocation associated with the Intersections Project.

2. Defendants Failed to Properly Analyze and Mitigate the Intersections Project's Effects on Water Quality, Which Are Likely to Adversely Impact the Endangered Salamanders.

(a) *The harmful effects to salamanders from impervious cover from highways are well documented.*

The Service has long recognized that increases in impervious cover, one of the major components of "urbanization," pose a grave threat to the endangered salamanders by degrading water quality. In its 2013 listing of the Austin blind salamander as endangered, the Service observed that "[b]oth nationally and locally, consistent relationships between impervious cover and water quality degradation through contaminant loading have been documented." FWS AR004588. In 2013, the Service's Austin Field Office published a "Refined Impervious Cover Analysis for the Four Central Texas Salamanders," in which it began by observing that a "vast amount of literature indicates that increases in impervious cover cause measureable stream degradation." TxDOT AR005308 (citations omitted). In the 2005 Barton Springs Salamander Recovery Plan, the Service discussed at length the relationship among impervious cover, stormwater runoff, pollutant loading, and adverse biological effects, while referencing multiple studies. For example, the Recovery Plan observed that "[s]everal studies have shown

relationships between the amount of impervious cover and adverse biological effects." TxDOT AR002231.

In the 1997 listing of the Barton Springs salamander, the Service documented the threat that construction projects in the watershed posed to the species, remarking that "[o]ne of the most immediate threats to the Barton Springs salamander is siltation of its habitat, owing primarily to construction activities in the Barton Creek watershed." FWS AR004441 (citations omitted). "Major highway, subdivision, and other construction projects along Barton Creek increased during the early 1980's and 1990's. . . . [T]he duration and frequency of sediment discharges from Barton Springs increased substantially during the 1990's." FWS AR004441 (citations omitted).[10]

It is undisputed that the Intersections Project will add impervious cover and increase pollutants. In the project's final Environmental Assessment, prepared under the National Environmental Policy Act ("NEPA"), TxDOT explains that the project would increase the amount of impervious cover and total suspended solid pollutant loads. FWS AR003525-26. Yet TxDOT claims there will be no adverse impacts because of its planned "Best Management Practices" ("BMPs"). For a concurrent highway project in the Barton Springs Recharge Zone (SH 45 SW), the Service submitted detailed comments on TxDOT's draft EIS, in which it specifically criticized TxDOT's vague invocation of BMPs in an attempt to avoid water quality impacts and thus take of species—the same salamander species at issue here. FWS AR002577-84.

[10] The quality of the water in the six creeks that cross the recharge zone, including Barton and Slaughter Creeks, directly affects water quality in the aquifer and at Barton Springs. FWS AR004441. Although these statements focus on Barton Creek, development in the watershed of each of these creeks would have similar effects.

In its comments on the SH 45 SW draft EIS, the Service admonished that "[c]omplete elimination of water quality impacts would require the retention of ***all*** runoff from the site, during construction, and roadway, once the project is completed." FWS AR002582 (emphasis added). Logically then, if all runoff from the site is not retained during and after construction, water quality would be degraded. Texas Parks and Wildlife Department echoed this concern and quoted the Service in its comments to TxDOT about the Intersections project, stating:

> [T]he implementation of water quality BMPs does not guarantee that adverse effects to water quality would be avoided. Occasional severe storm events could result in failure of BMPs as the storage capacity of temporary controls are overwhelmed and result in a significant amount of pollutants entering the aquifer either through karst features within or adjacent to the ROW or through Slaughter Creek (and its tributaries) or Danz Creek (and its tributaries).

FWS AR002798-2799; TxDOT AR008273-74.

It is undisputed that TxDOT will not retain all runoff from the site. No rational connection exists between the fact of water quality impacts and TxDOT's conclusion of no adverse effects to the salamanders.

(b) *The inadequate Edwards Rules risk degrading the salamanders' aquatic habitat with sediment and other harmful pollutants.*

TxDOT's justification for its initial "no effect" determination, and the Service's ultimate concurrence, focused on TxDOT's commitment to follow the Edwards Aquifer Rules ("Edwards Rules"). The Texas Commission on Environmental Quality ("TCEQ") promulgated the Edwards Rules to regulate activities having the potential to pollute the Edwards Aquifer.[11] 30 TEX. ADMIN. CODE §§ 213.1 *et seq*. But the commitment to follow the Edwards Rules does not

[11] The mechanisms for limiting pollution include the prohibition of development within a certain distance buffer of a recharge feature, a mandatory protocol if openings in the limestone (voids) are discovered during construction, and a requirement to install measures to reduce the load of total suspended solids in runoff from a project. *See* 30 TEX. ADMIN. CODE § 213.5(b),(f).

prevent adverse impacts to the salamanders. The Edwards Rules require that BMPs be installed to control the amount of discharge of pollution after completion of construction. Specifically, the "measures must be designed, constructed, operated, and maintained to insure that 80% of the incremental increase in the annual mass loading of total suspended solids from the site caused by the regulated activity is removed." *Id.* § 213.5(b)(4)(D)(ii)(I).

For several reasons, this requirement does not translate into adequate protection of the endangered salamanders. First, the Edwards Rules only aim to reduce total suspended solids ("TSS"), despite the presence of other pollutants in highway runoff that can harm salamanders. As the Service initially observed, "TSS is the only contaminant addressed in the consultation document, but it is not the only one that can affect water quality for the salamanders. All potential changes to water quality and quantity that could result from construction and operation of the proposed road improvements should be addressed." FWS AR003429

For a concurrent highway project in the Barton Springs Watershed (SH 45 SW), the Service criticized TxDOT's reliance on Edwards-Rules compliance to claim no environmental impacts, writing in its comment letter that, "[i]n addition to TSS, other water quality pollutants, including heavy metals, petrochemical products, nutrients (nitrates and phosphorus), bacteria, and organic carbon, are associated with highway construction and road runoff."[12] FWS AR002581. Likewise, the City of Austin and others have consistently commented on this and other inadequacies in the Edwards Rules. FWS AR003480; TxDOT AR006934. TCEQ has never indicated that controlling TSS eliminates other pollutants harmful to wildlife. In fact, biological

[12] In addition, there is a significant body of literature identifying the various pollutants in highway runoff. *E.g.*, FWS AR004413-14; FWS AR000517; TxDOT AR000661-662; *see also* TxDOT AR010032 (listing sources).

considerations played no part in development of the Edwards Rules. The Service's Concurrence Letter and TxDOT's supporting materials ignore the potential for pollutants besides TSS to adversely affect the salamanders.

Second, a project that complies with the Edwards Rules is not required to have BMPs that remove all TSS. For example, if the base annual TSS load for an undisturbed area was 50 pounds, and a proposed project would increase the annual mass loading of TSS by 100 pounds, then that project would be required under the Edwards Rules to remove 80 pounds of TSS, resulting in a net increase of 20 pounds TSS and a total of 70 pounds in the area. Nowhere do Defendants explain why or how the 20 percent increase in TSS allowed under the Edwards Rules would reduce impacts to salamanders to an insignificant or discountable degree.[13]

In its Concurrence Letter, the Service "conclude[d] not only that the reduction of calculated TSS load leaving the Project area will be reduced in absolute quantity, but that the resulting concentrations of sediment leaving the Project and entering the Edwards Aquifer *should be incrementally reduced* when other contributing factors are held constant (e.g., flows, drought, groundwater withdrawals)." FWS AR005182 (emphasis added). But the Service provides no support for its conclusion that such "other contributing factors" would be held constant. In fact, with climate change and other environmental changes expected to occur, it is unreasonable to assume that droughts and flows would be unchanging. The Service has previously acknowledged that climate change in combination with other factors is a threat to the endangered salamanders.

[13] Moreover, calculating the TSS load on an annual basis is imprecise for impacts to species in the short-term, as it allows for wide fluctuations in TSS load in the short-term. There is no discussion about why a year is biologically relevant for the salamanders, particularly considering its life cycle stages when salamanders may be more sensitive to pollution. *See* FWS AR004595 (finding that juvenile spotted salamanders are particularly sensitive to a contaminant found in highway runoff); FWS AR004446-47 (amphibian eggs and larvae more sensitive to pollutants).

FWS AR004601. Recently, the Service analyzed the impacts of climate change and groundwater pumping on the endangered salamanders and concluded that man-made changes to the landscape—including increased impervious cover and changes in water quality—would make it more difficult for the salamanders to survive.[14] A substantial amount of scientific research shows how climate change will affect Central Texas's precipitation patterns, and the Service must consider that information in determining how climatic forces will factor into the Project's effects.[15]

During construction, the Edwards Rules call for "temporary BMPs" with no specific performance measures, but simply a narrative prescription to install certain BMPs "to the degree attainable." 30 TEX. ADMIN. CODE § 213.5(b)(4)(D)(i)(II). Given this vague directive, compliance with the Edwards Rules does not result in attainment of any particular level of pollution control during the construction phase of a project. As such, implementation of those "temporary BMPs" does not prevent impacts to the salamanders.

TxDOT acknowledges "if contaminants, such as sediments and hydrocarbons, are mobilized during construction, they could flow into Slaughter Creek and enter the aquifer." FWS

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[14] U.S. FISH & WILDLIFE SERV., ENVIRONMENTAL IMPACT STATEMENT FOR THE BARTON SPRINGS/EDWARDS AQUIFER CONSERVATION DISTRICT HABITAT CONSERVATION PLAN 3-25 (May 2018), https://www.fws.gov/southwest/es/.../BSEACD_fHCP_EIS_w_o_Appndx_20180703.pdf.

[15] Three reports the Service recently cited in evaluating climate change's impacts on salamanders are: REGIONAL CLIMATE TRENDS AND SCENARIOS FOR THE U.S. NATIONAL CLIMATE ASSESSMENT PART 4, CLIMATE OF THE U.S. GREAT PLAINS (2013), http://www.nesdis.noaa.gov/technical_reports/142_Climate_Scenarios.html; CLIMATE CHANGE IMPACTS IN THE UNITED STATES: THE THIRD NATIONAL CLIMATE ASSESSMENT (Melillo et al. eds., 2014), https://www.globalchange.gov/browse/reports/climate-change-impacts-united-states-third-national-climate-assessment-0; and INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, FIFTH ASSESSMENT REPORT (AR5) (2013), https://www.ipcc.ch/report/ar5/.

AR003429. TxDOT plans called for the use of temporary BMPs to minimize the potential for mobilization; however, but the Service criticized that plan because TxDOT did not discuss "the possible adverse effects to the species if the BMPs are not installed correctly or temporarily fail due to excessive rainfall or other reasons." FWS AR003429.

In sum, compliance with the Edwards Rules is not sufficient to protect the salamanders—nor were they ever meant to be. The Texas Commission on Environmental Quality ("TCEQ") implemented the Edwards Rules. The TCEQ is not charged with protecting endangered species in Texas and has no particular biological expertise. Nowhere do the Edwards Rules mention endangered or sensitive species, salamanders, or wildlife, save for a mention of "aquatic life" in the purpose provision. 30 TEX. ADMIN. CODE § 213.1(1). The general goal to protect aquatic life, though admirable, is no substitute for the substantive and procedural requirements of the ESA.

(c) *Defendants failed to consider the best available science regarding the effectiveness of sediment controls.*

(i) Permeable Friction Course

TxDOT plans to utilize permeable friction course pavement ("PFC") as the primary water quality control for the Project. FWS AR003434; TxDOT AR009172. PFC is an asphalt mixture placed over an impervious base that contains interconnected air voids. FWS AR001794. These voids allow rainwater to drain into the pavement, which can enhance driver safety during rainstorms, and has more recently been considered a water quality control measure. FWS AR001794.

However, PFC has several documented limitations, and nothing in the Administrative Record shows long-term success at treating runoff. A report on the practice of using PFC, from the Center for Transportation Research ("CTR") in Austin, summarizes the current practices of and literature on PFC, and finds that it can reduce pollutant concentrations in the highway runoff

"during the functional service life of the pavement, which ultimately results in the clogging of the pavement." FWS AR001794. CTR's report does not discuss an estimate of how long "the functional service life" would be; however, it did indicate that the material accumulating in the pores of PFC contains high concentrations of pollutants, such as heavy metals. FWS AR001794. Because of this clogging and the toxicity of captured material, PFC requires aggressive and costly maintenance. *See* TxDOT AR003301-02 (listing among PFC's limitations are that it will require "replacement . . . at regular intervals, which entails significant expense.").

But even assuming proper maintenance, pollution reduction is unlikely in the long-term. Very little data exists regarding long term effectiveness of PFC pavement or its purported water quality benefits. In a 2007 study on PFC, researchers conducted a nationwide survey that found "[n]one of the state [Departments of Transportation] have studied or determined any water quality benefits." FWS AR001828. This study simply looked at practices and literature from different parts of the world and did not include any testing of PFC's potential water-quality benefits. Although studies from Europe indicate that PFC shows success at removing TSS, it has not shown to be effective at removing other pollutants, and in some cases may actually *increase* other pollutants. For example, PFC may increase the levels of dissolved copper and other dissolved metals in runoff as compared to conventional asphalt. TxDOT AR003271-72. For this reason, it is unreasonable to rely on PFC as a measure to reduce impacts to aquatic species absent any studies demonstrating a beneficial impact. The Service thus failed to provide a reasoned basis for concluding that the Project's use of PFC would reduce effects to the salamanders to an insignificant or discountable degree.

(ii) Stacking of BMPs

Defendants also impermissibly rely on the concept of locating BMPs in a series (also called "stacking") to achieve a higher level of TSS reduction. Specifically, the Concurrence Letter states that the Service is "convinced that the demonstrated performance of several of the BMPs and the reasonable compounded effectiveness when those are layered (or stacked) with other BMPs, even where absolute effectiveness data is lacking, will protect" the salamanders. FWS AR005185. Nothing in the record explains what "reasonable compounded effectiveness" means or what it is based on. The best available science shows that sequential BMPs do not actually lead to significant decreases in pollutant concentrations. One study found sedimentation or filtration of runoff that had previously passed through PFC resulted in little additional improvement in water quality.[16] Another study found that runoff from PFC found no significant decrease in pollutant concentrations from subsequent treatment with vegetated filter strips.[17,18] Given the contradiction of these studies with the agency's findings, it was unreasonable for the Service to assume that the stacking of BMPs would add up to a significantly greater amount of treatment that would in turn give greater protection to the salamanders.[19]

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[16] Rob Berbee et al., *Characterization and treatment of Runoff from Highways in the Netherlands Paved with Impervious and Pervious Asphalt*, 71 WATER ENVIRONMENT RESEARCH 2,183-190 (1999).

[17] Michael Barrett et al., *Stormwater Quality Benefits of a Porous Friction Course and Its Effect on Pollutant Removal by Roadside Shoulders*. 78 WATER ENVIRONMENT RESEARCH 11, 2177-2185 (2006).

[18] Plaintiff Save Our Springs provided the studies cited in footnotes 16 and 17 to TxDOT in August 2014 and to the Service in September 2016, and each study is cited multiple times in the Administrative Record for different points. TxDOT AR009935, AR010040; *see also* FWS AR001813; TxDOT AR003268.

[19] The Concurrence Letter also refers to stacking with regard to temporary erosion control measures and cites to the TCEQ's Edwards Aquifer Rules. FWS AR005181 (citing TxDOT

(d) *Defendants did not consider the potential for TxDOT's BMPs to fail.*

The Service's concurrence heavily relies on the continuous optimal performance of TxDOT's BMPs to achieve the anticipated levels of TSS removal. But the agencies unreasonably concluded that the BMPs would be performing optimally given the area's unpredictable precipitation patterns, TxDOT's history of inadequately maintaining BMPs, and TxDOT's own statements about the lack of monitoring for this project. To protect the salamanders, the Service should have required adequate monitoring and maintenance plans, as well as off-site mitigation to offset any potential failures of their BMPs**.**

Even with properly installed BMPs, without proper operation and maintenance, the BMPs will do little in the way of water quality protection. TxDOT AR001933. TxDOT has a poor track record when it comes to maintaining temporary and permanent BMPs. The Service noted the failure of TxDOT's water quality control measures on U.S. 290 and Highway 360 in the Barton Springs Recharge Zone when it protected the Barton Springs salamander under the ESA. FWS AR004443 ("Bypass events from a regional water quality pond at the US 290/Loop 360 interchange have resulted in significant sediment deposition along the entire length of an unnamed tributary and a portion of Barton Creek" upstream of Barton Springs). During construction, failing erosion and sediment controls at the site during a rainstorm can deliver suspended solids to receiving waters at levels far in excess of background conditions. FWS AR004443; TxDOT AR000966, AR001933. For the Intersections Project, TxDOT plans to address erosion control deficiencies "immediately but no later than seven days after the

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AR001857-2180). But the TCEQ's statements are about stacking permanent BMPs, and the guidance document nowhere discusses stacking temporary erosion and sediment control measures. TxDOT AR002072.

deficiency is observed." TxDOT AR010272. This could mean up to a week of sediment washing into the aquifer, or even longer if workers fail to promptly identify the deficiency. In addition, a report by Dr. Lauren Ross for Plaintiff Save Our Springs Alliance documents recent instances of TxDOT failing to maintain construction BMPs. TxDOT AR009973-97. The report, titled "TxDOT Failure to Properly Maintain Construction-Phase Erosion and Sediment Controls in Area Subject to TCEQ Edwards Rules," was submitted with Save Our Springs Alliance's comments on the SH 45 SW draft environmental document. Save Our Springs provided a copy to the Service for informational purposes while this consultation was pending. TxDOT AR009935. The report includes twenty-three photographs documenting deficient construction-phase BMPs on U.S. 290 within the Barton Springs Recharge Zone. TxDOT AR009977-97. Dr. Lauren Ross also photographed and documented deficiencies of erosion and sediment control measures at the SH 45 SW construction site in February 2017. FWS AR003685-717. Despite having this evidence before it, the Service in its Concurrence Letter ignored how BMP failure during construction could harm the endangered salamanders.

Operational failures can be prevented with proper maintenance, but the Concurrence Letter does not mention any plans of TxDOT to monitor permanent BMPs post-construction. In response to concerns about BMP performance expressed by the Barton Springs Edwards Aquifer Conservation District, an agency created by state law to protect groundwater quality, TxDOT retorted that "[u]se of an agency approved BMP negates the need for monitoring of the BMP, provided the BMP is constructed as designed." TxDOT AR010273. In other words, TxDOT

never plans to monitor or evaluate the actual performance of their permanent BMPs.[20] But since the success of the BMPs is key to the Service's Concurrence, it should have required a specific monitoring, quality assurance, and response plan to ensure the continued efficacy of the BMPs.

Although excessive rainfall and storm events cannot be controlled, measurable steps can be taken to reduce the impacts of such weather. Yet TxDOT did not provide specific maintenance and emergency response measures to reduce the intensity of severe-weather impacts, post-storm monitoring, or a method to track BMP maintenance. Because of the possible adverse effects to the salamanders if BMPs are installed incorrectly, TxDOT's failure to provide any such measures, and the Service's looking the other way, are abdications of their respective duties under the ESA.

In its comments on SH 45 SW, the Service observed that TxDOT's proposal for an environmental compliance plan and oversight was not enough to avoid water quality degradation because "repairing a BMP after it has failed would not reduce or mitigate for the environmental impacts resulting from that failure." FWS AR002582. The Service noted that this concern was especially applicable because on SH 45 SW, like the Intersections Project, TxDOT plans to use detention basins both to treat for TSS and as hazardous material traps in the event of a spill. *Id*. Thus, according to the Service, "[i]n order to ensure no adverse effects, TxDOT would need to be able to prevent outflow from the BMPs after hazardous material spills, including during

[20] TxDOT plans to conduct some testing for the permeability of PFC, but even less than TCEQ recommends. TxDOT will only test the PFC right after it has been poured, and then not again for three years, and every two years after that. FWS AR005183. This schedule allows for large gaps when TxDOT's primary water quality control may not be functioning. TCEQ guidance recommends that when it takes more than sixty seconds for water to flow through PFC, inspections should be annual. TxDOT AR003302. TxDOT's failure to hasten the frequency at this threshold means that the deterioration of the PFC's effectiveness may be noticed more slowly than is recommended for Edwards Rules compliance.

extreme weather events," but nothing in the record shows that TxDOT expects to be able to accomplish this. FWS AR002582. A single spill could cause the Austin blind salamanders to go extinct and cause localized populations of Barton Springs salamanders to be extirpated. FWS AR004591.

In a short memo from TxDOT to the Service responding to questions about erosion and sedimentation measures during construction, TxDOT admits that "[t]he effectiveness of temporary construction BMPs is difficult to quantify," in part because "[c]ontinually changing construction site conditions along with other factors make it virtually impossible to estimate what level of effectiveness of sediment control will be achieved during the construction of a project." TxDOT AR010087. As a result, TxDOT essentially throws up its hands and abandons any specific quantification of impacts or remediation measures. A short memo titled "Effectiveness of Temporary Erosion and Sedimentation Controls on the MoPac Intersections Project," which TxDOT wrote and the Service relied on, is one example of TxDOT providing a vague plan where concrete steps should have been developed. FWS AR003644; TxDOT AR010087. The memo states that six permanent detention ponds will be used for temporary sedimentation purposes during construction, and that additional sediment traps will be added "as needed" and as "determined by the contractor." Nowhere is there any information about how and when the "need" for additional traps would be triggered, nor whether there would be any monitoring of the effectiveness of existing sediment controls.

Furthermore, the Concurrence Letter does not discuss any kind of water quality monitoring, despite it previously being a focus of the Service's evaluation of a project. In an early response to the Service's request for concurrence on the Intersections Project, the Service said "[w]e believe some form of monitoring is necessary to determine a threshold for reinitiation

if the proposed TSS levels are not being attained or other contaminants are not being captured." FWS AR004898. For another highway project, SH 45 SW, the Service expressed similar concerns, writing, "[w]ater quality monitoring is needed pre-construction to establish baseline conditions, then[,] during[,] and post construction, in Bear Creek, Flint Ridge Cave and other recharge locations, to evaluate and monitor effects of the project." FWS AR002582.

(e) *Defendants failed to properly consider and mitigate for the risks to water quality and endangered salamanders from encounters with voids during construction*

The Barton Springs segment of the Edwards Aquifer is karst, meaning that most of the flow of groundwater is through voids (caves, conduits, cavities) formed by dissolution and fracturing of the host rock. FWS AR001690; TxDOT AR002348. Because voids can be several feet or more in diameter, the flow of groundwater from a void or other point of recharge to its discharge point, Barton Springs in this instance, can be extremely rapid and offer little opportunity for filtration of sediment or pollution. FWS AR001690; TxDOT AR002348. This characteristic of the Edwards Aquifer means that it is easier for contaminants and pollutants—stressors that can affect individual salamanders, their habitats, and their prey—to reach endangered salamander habitat from construction activities. FWS AR004435, AR004594; TxDOT AR000958, AR005359.

TxDOT acknowledged in its Environmental Assessment that the highest risk for negative groundwater impacts from the Intersections Project is the encounter of underground voids during roadway excavation, and while drilling for piers and geotechnical boreholes.[21] FWS AR002862,

[21] The Edwards Aquifer Rules explain that "[m]any sensitive features, such as solution cavities and caves, are not identified during the Geological Assessment, but are discovered by excavation during the construction phase of a project." FWS AR001636; TxDOT AR009546.

AR003539; TxDOT AR007250, AR008380. If these voids are encountered, the water quality could be impacted through introduction of silt, fuels, lubricants, and other pollutants to the subsurface, and groundwater flow may be disrupted. Despite the recognition of the likelihood of encountering voids or other recharge features during excavation, and the expected negative impacts to water quality, TxDOT delays creation of a void mitigation plan for the impacts until after such a void is encountered.[22] FWS AR003539; TxDOT AR008380.

Just after initiation of consultation, the Service also expressed concern "that the significant excavation required to construct the project, as proposed, may intersect subsurface drainage conduits or previously undiscovered recharge features within the area." FWS AR004898; TxDOT AR008987. The Service said that it is probable that TxDOT will encounter new recharge features during construction, "based on the number of caves in the immediate project area which provide direct or indirect recharge to the aquifer." FWS AR004898; TxDOT AR008987. The Service criticized TxDOT's plan to postpone its plan for void encounters, explaining, "I don't think either of our agencies wants to get halfway through this project and have to stop construction and reinitiate consultation if a new recharge feature is discovered during excavation for the roadway." FWS AR004898; TxDOT AR008987.

In a subsequent communication the Service expressed similar concerns and asked TxDOT to document "why its void mitigation procedures would result in insignificant or discountable effects on salamanders, since *once a void is uncovered it may be too late to prevent adverse effects from occurring*." FWS AR003431; TxDOT AR009012 (emphasis added). The

[22] "A geologist will evaluate the void and work with the design engineer, if necessary for structural concerns, to develop a void mitigation plan. The void mitigation plan must be certified by a geologist, submitted to TCEQ and approved prior to the implementation of mitigation and before continuing construction in the vicinity of the void." FWS AR003539; TxDOT AR008380.

letter also states that TxDOT must provide a scientific basis for not addressing small void sizes.[23] FWS AR003431; TxDOT AR009012.

Despite the Service raising concerns about void encounters, TxDOT continues to postpone planning for mitigation of voids until after they are actually encountered, while using those hypothetical future plans to support its finding that the Intersections Project will not adversely affect the endangered salamanders. FWS AR003444-45; TxDOT AR009022-23. This contradicts TxDOT's own statement in the EA that there may be an effect on federally-listed endangered species if their habitat is encountered in the intersection of a void.[24] FWS AR003539; TxDOT AR008380. In addition, nothing in the record shows TxDOT ever responded to the Service's concerns that TxDOT was not planning to address small void sizes. *See* FWS AR003440-47; TxDOT AR009018-25, AR009048. Likewise, nothing in the record shows TxDOT provided a scientific basis for not addressing small voids or not changing the project's plans to address small voids when they are encountered.[25] FWS AR003440-47; TxDOT AR009018-25, AR009048.

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[23] "However, [attachment F] also states that voids with less than 1 CF of volume of with less than 6 inch dimension in all directions would not require action. TxDOT needs to provide a scientific basis for not addressing small void sizes unless you are able to assess the voids connectivity to the Edwards Aquifer recharge." FWS AR003431; TxDOT AR009012.

[24] The EA includes a plan for a Section 10(A)(1)(a) permitted scientist to inspect the site of a void encounter as soon as possible to evaluate potential for species habitat. FWS AR003539; TxDOT AR009012.

[25] In a file named "BMP Details," attached to TxDOT's October 2017 letter supplementing the consultation discussion, the Void Mitigation section says "[a] dry void that is less than 1 CF in volume or less than 6 in. in all directions will not require action." FWS AR003599; TxDOT AR009048.

The Service concurred with TxDOT's "not likely to adversely affect" decision for the endangered salamanders despite its concerns about the potential for impacts to water quality and the salamanders from void encounters, and despite TxDOT's failure to properly respond to these concerns. In its Concurrence Letter, the Service failed to properly "examine the relevant factors and articulate . . . a rational connection between the facts found and the choice made" regarding void encounters. *Motor Vehicle Mfrs. Ass'n*, 463 U.S. at 43 (citation and internal quotation marks omitted). In fact, the only mention of voids in the Concurrence Letter is a listed conservation measure that is nearly identical to the one listed in the letter initiating consultation: "[s]pecific void mitigation measures will be followed for any previously unknown karst voids encountered during construction thus protecting the Edwards Aquifer from TSS during construction." FWS AR005191; TxDOT AR009755; *see* Exhibit A. The Service's failure to explain why it changed its mind during the consultation process is unlawful because it failed to provide a reasoned explanation for doing so. *Ctr. for Biological Diversity*, 408 F. App'x at 66 (citation omitted).

3. Defendants failed to consider impacts from TxDOT's nearby highway projects, groundwater withdrawal and drought—"cumulative effects" that must be analyzed under the ESA

In an ESA consultation, the Service and action agency must not consider the impacts of the proposed project in a vacuum. Rather, ESA regulations require consideration of "cumulative effects." 50 C.F.R. § 402.02. Here, Defendants violated this mandate by failing to consider impacts from TxDOT's nearby highway projects, groundwater withdrawal and drought, and other projects affecting the endangered warbler and salamanders.

"Cumulative effects are those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action

subject to consultation." *Id.* (definition of cumulative effects). The "action area" includes "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." *Id.* (definition of action area). It is important to evaluate the impacts of actions taken by State and private entities that could impact the species at issue, because such actions are not subject to Section 7 consultation; thus this is one of the only opportunities to consider such activities in relation to the federal project at issue.[26]

Here, the Service determined that the action area would be bounded by the existing right-of-way for the area analyzed for terrestrial surface effects, but it also included additional areas of the Edwards Aquifer downgradient of the project, including Blowing Sink Cave and Barton Springs. FWS AR005177-78. Several planned projects within this action area should have been considered.

First, SH 45 SW is a state highway project adjacent to the Intersections Project and simultaneously being constructed over the Barton Springs Recharge Zone.[27] TxDOT AR007109. Yet nothing in the Concurrence Letter or elsewhere in the record demonstrates Defendants analyzed the cumulative impacts of these two road projects happening in the same area and

[26] The analysis of cumulative effects is distinct from the analysis of whether a project is interrelated, interdependent of, or otherwise connected to the project at issue. The definition of cumulative effects specifically excludes federal projects, so there is no need to find some causal link between the projects. A cumulative effects analysis looks broadly at the effects of non-federal projects that are in the same action area and could affect the same species as the project subject to section 7 consultation.

[27] Plaintiffs do not concede that SH 45 SW is a "state" project properly segmented under the National Environmental Policy Act and Federal Highway Administration regulations. However, for purposes of this argument, Plaintiffs represent that TxDOT holds SH 45 SW out to be a state project, and the Service has accepted that determination.

watershed with likely similar effects.[28] This comes despite the fact that the Service has repeatedly expressed concerns about the potential for adverse impacts of the SH 45 SW project to the Austin blind salamander, Barton Springs salamander and golden-cheeked warbler. *E.g.* FWS AR004981-82 ("The Austin Field Office believes that if TxDOT does not obtain incidental take for the [warbler] before construction of the SH 45 SW project, a violation of the section 9 take provision is likely"), FWS AR002577-84, AR004764.

In addition, groundwater withdrawals, managed by the Barton Springs Edwards Aquifer Conservation District ("District"), are reasonably certain state and private actions occurring within the Barton Springs segment of the Edwards Aquifer. Such effects are important to consider because groundwater withdrawal can reduce springflows and in turn reduce dilution of contaminated water. And the Service relies partly on dilution to conclude that highway runoff will have an insignificant effect on the species.[29] FWS AR005183. The extent of the groundwater withdrawal program and its potential effects on the species were the subject of a concurrent ten-year process between the District and the Service. 83 Fed. Reg. 33,249 (July 17, 2018). Thus, the Service was fully aware of the certainty of this activity and effects, and it was obligated to evaluate those effects together with the effects from the Intersections Project.

In addition, several housing and commercial developments have been approved or are currently being constructed in the Recharge Zone, many of which are within a mile of the

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[28] Many other highway constructions and expansions over the Barton Springs Recharge Zone are planned over the next decade, as identified in the Capital Area Metropolitan Planning Organization 2040 Regional Plan at TxDOT AR007108-36. Yet nothing in the Record shows TxDOT provided the Service with information on other area road projects, other than to argue why SH 45 SW and MoPac South are not connected to MoPac Intersections.

[29] As described in Section 2(b) above, drought exacerbates the effects of groundwater withdrawals, and these conditions should be considered together.

Intersections Project. These include, but are not limited to, Greyrock Ridge, Avana, and Hill Country Corners. These projects are catalogued in the State Final Environmental Impact Statement for State Highway 45 Southwest, prepared by TxDOT in January 2015, an excerpt of which is attached as Exhibit B. These developments will add impervious cover in the area, present the same sedimentation issues during construction, and will likely result in groundwater contamination from lawn chemicals (i.e., fertilizers, pesticides, and nutrients), thus compounding the threats to the Intersections Project presents to the salamanders. *See* FWS AR004583, AR004595-97. These private developments occur at various stages of development right next to TxDOT's road projects. Although portions of some projects have already been completed (i.e., Greyrock Ridge) and thus might not be "future" actions, the effects of remaining construction must be considered.[30]

The Service does not even attempt to conduct an analysis of cumulative effects of nearby highway and development projects on the Recharge Zone in its Concurrence Letter.[31] The Service's failure to consider this relevant factor in its effects determination violates the ESA. *See Medina Cty.*, 602 F.3d at 699; *see also* 16 U.S.C. § 402.02.

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[30] Past projects in the action area should be considered as part of the environmental baseline; however, this is not discussed in the Service's Concurrence Letter. The environmental baseline includes "the past and present impacts of all Federal, State, or private actions and other human activities in the action area." 50 C.F.R. § 402.02 (definition of effects of the action)

[31] The Service's indirect effects analysis similarly comes up short. Indirect effects are "those that are caused by the proposed action and are later in time, but still are reasonably certain to occur." 50 C.F.R. § 402.02. For example, an indirect effect may be more cars using the route because the project allows them to go faster, which results in more trash along the roadway. The Concurrence Letter does not identify any indirect effects from the Intersections Project, and in fact its indirect effects inquiry is limited only to whether the project will cause population growth. See FWS AR005184. This follows TxDOT's lead in its NEPA analysis of indirect impacts, see TxDOT AR007211, but is not consistent with the ESA's mandate.

4. Defendants failed to consider impacts from third party relocation of utilities, an "interdependent action" that must be analyzed under the ESA

Interdependent actions must be considered in the effects determination during ESA consultation. 50 C.F.R. § 402.02 (defining "effects of the action"). "Interdependent actions" are those that have no independent utility apart from the action under consideration. *Id.* TxDOT and the Service failed to consider and analyze the impacts of the relocation of underground utilities as part of its effects determination, despite an early recommendation during consultation that these effects should be considered. FWS AR003431; TxDOT AR009012.

In a letter responding to TxDOT's request for concurrence, the Service explained "TxDOT should also evaluate and discuss interrelated actions . . . and interdependent effects (those that have no independent utility apart from the action under consideration, *such as relocation of utility lines to make way for road improvements*) (50 CFR 402.02)." FWS AR003431; TxDOT AR009012 (emphasis added). Thus the Service clearly recognized the possibility for utility relocation to be an interdependent effect of the Intersections Project to be considered in consultation.

TxDOT responded to this request by acknowledging that they identified "the relocation of underground utilities owned by others" as one interdependent action. FWS AR003443; TxDOT AR009021. It further explained that "[t]he new trenching and boring for these relocations and any related disturbance will take place within the limits of the existing right-of-way and will follow applicable requirements for water quality protection and endangered species compliance." FWS AR003443; TxDOT AR009021. Despite acknowledging this interdependent action, TxDOT failed to include *any* assessment of the effects of this utility relocation and how those effects would contribute to the overall effects of the Intersections Project on the endangered species. And although TxDOT says that the relocation of utilities will "follow

applicable requirements for . . . endangered species compliance," not a single document in the record shows that the utility company or TxDOT worked with the Service to ensure compliance with the ESA. FWS AR003443; TxDOT AR009021

Nor did the Service obtain additional information from TxDOT regarding utility relocation to allow it to properly consider the impacts from this interdependent action. And there is not a single mention of underground utility relocation in the Service's Concurrence Letter, let alone a discussion about the interdependent effects of this activity. FWS AR005188-98; TxDOT AR009752-62.

Defendants should have considered the effects of underground utility relocation as a part of their analysis of the effects of the Intersections Project because it is an interdependent action. Because they did not, the agencies failed to consider this relevant factor, in violation of the ESA and the APA. *See Medina Cty.*, 602 F.3d at 699; *see also* 16 U.S.C. § 402.02.

5. Defendants failed to completely and properly analyze and consider adverse effects of the Intersections Project on the golden-cheeked warbler

Golden-cheeked warbler habitat lies within the project boundaries and surrounding zones, with approximately 7.4 acres of golden-cheeked warbler habitat occurring within the Intersections Project's footprint. FWS AR002882. Observations of the warbler have been made near the Intersections Project. FWS AR004762.

Prior to the initiation of consultation, the Service told TxDOT that it did not agree with its "no effect" determination for the warbler, explaining that "one year of negative surveys of the project area is not sufficient to justify the 'no effect' determination."[32] FWS AR004762.

[32] In comments on the adjacent SH 45 SW highway project where TxDOT also conducted a single year of warbler surveys, the Service explained that "a single year of presence absence

Nevertheless, here, TxDOT conducted only a single year of golden-cheeked warbler presence/absence surveys before reaching its conclusion that the warbler is not present and therefore would not be affected by the Project. FWS AR002832-916; TxDOT AR007221-304. Because the warbler is a highly mobile, migratory species, its long-term use of an area cannot be predicted with a single year of presence/absence surveys. FWS AR002580. In addition, the Service expressed concern that the warblers "may be disturbed by construction activities, noise, or due to the removal of foraging habitat." FWS AR004762.

Despite this feedback, TxDOT did not conduct additional surveys for golden-cheeked warblers, nor did it provide an adequate assessment of the effects of "construction activities, noise, or … removal of foraging habitat" on the warbler. Rather, TxDOT simply changed its consultation determination from "no effect" to "may affect, not likely to adversely affect."

Despite TxDOT's failures to properly address previously expressed concerns about the Intersections Project's effects on the warbler, the Service concurred with TxDOT's "not likely to adversely affect" determination for the warbler. The Service's failure to explain why it changed its mind during the consultation process is unlawful because it failed to "provide a reasoned explanation for doing so." *Ctr. for Biological Diversity*, 408 F. App'x at 66 (citation omitted).

CONCLUSION

Defendants acted arbitrarily, capriciously, and "not in accordance with law" in their determination that the Intersections Project is "not likely to adversely affect" the Barton Springs salamander, the Austin blind salamander, and the golden-cheeked warbler. The Service failed to

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surveys… is not sufficient information on the long-term use of the area by [the warbler] to justify a no take determination," FWS AR002580. Rather, "three consecutive years of negative [warbler] presence/absence surveys must be completed, in accordance with written Service survey protocol, before TxDOT can justify its proposed "no take" determination." *Id.*

properly consider all the relevant factors or articulate a rational connection between the facts found and the conclusions made in its concurrence decision. And in relying on that flawed concurrence decision, TxDOT fails to ensure that the Intersections Project will not jeopardize the endangered salamanders and warbler in violation of the ESA. Defendants failed to properly consider the harm caused by impervious cover to the endangered salamanders and the questionable effectiveness of measures to control sediment and dangerous pollutants, and completely failed to consider cumulative and interdependent effects in their flawed analysis.

For all the reasons explained above, the Court should hold that (1) the Service unlawfully concurred with TxDOT's determination that the Intersections Project would not adversely affect endangered wildlife, and (2) TxDOT unlawfully relied upon that unreasonable concurrence. If the Court so holds, Plaintiffs respectfully request further briefing on remedy.

DATED: September 5, 2018

Respectfully submitted,

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CERTIFICATE OF SERVICE

I certify that on September 5, 2018, I electronically filed the foregoing with the Clerk of the Court using the CM/ECF system, which will automatically notify via email all counsel of record.

/s/ Jennifer L. Loda
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